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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,773	07/06/2001	Steven Michael Bellovin	12177/60501	7692

7590 06/30/2005

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EXAMINER

PEREZ, ANGELICA

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/900,773	BELLOVIN, STEVEN MICHAEL	
	Examiner	Art Unit	
	Perez M. Angelica	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 17, 21 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Tayloe et al. (Tayloe, US Patent No.: 6,192,240 B1) in view of Smolik (Smolik, Kenneth Frank; US Patent No.: 6,119,005 A).

Regarding claims 1 and 21, Tayloe teaches of a method for processing a call, communication interruption, telephone call interruption and a telecommunication system (column 2, lines 22-38), between at least two communication devices (figure 2, column 1, lines 5-9; where it is inherent in the art for cellular telephone communications to operate between, at least, two communication devices) comprising the steps and means of: based on the consulting, predicting, during an established communication between the communication devices, that a connection to one of the communication devices will be interrupted (column 3, lines 22-28; e.g., "until an outage is predicted"; where an outage causes communication interruptions), and announcing, before the connection is interrupted, that the connection to the one communication device will be

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interrupted (column 3, lines 22-28; where at least one of the callers involved in the communication is notified "that an outage is imminent", before the call is terminated).

Tayloe does not specifically teach of consulting data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress.

In related art, concerning a system for automated determination of handoff neighbor list for cellular communications system, Smolik teaches of consulting data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress (columns 1 and 2, lines 32-67 and 1-28, respectively; where an automated handoff list with information regarding intervening structures is maintained).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's method for processing a communication interruption with Smolik's information regarding interfering structures in order to automatically determine handoffs between neighboring base stations when communications deteriorate, as taught by Smolik.

Regarding claim 2, Tayloe in view of Smolik teaches all the limitations according to claim 1. Tayoe further teaches where at least one of the communication device is selected from a group consisting of a wireless telephone, a cellular telephone, a landline telephone, a PDA (personal digital assistant), a computer and a mobile communication device (column 2, lines 64-67; where the examiner selected "cellular telephone" from the choices provided by the applicant).

Regarding claim 3, Tayloe in view of Smolik teaches all the limitations according to claim 1. Smolik further teaches where a prediction point indicates one of a tunnel blocking the communication, a hill obstructing the communication, an indoor feature obstructing the communication, an outdoor feature obstructing the communication, (column 1, lines 35-49; where intervening structures can be a tunnel).

Regarding claim 17, Tayloe in view of Smolik teaches all the limitations according to claim 1. Tayloe further teaches where least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area (figure 1 and column 2, lines 22-38), the method further comprising the step of: calculating the duration of the interruption prior to the announcement (column 4, lines 3-5; e.g., "the time remaining...before the call is dropped").

Regarding claim 26, Tayloe teaches of a method comprising (column 1, lines 5-9): predicting a communication drop-off for two communication devices in communication (column 3, lines 22-28; e.g., "until an outage is predicted"; where an outage causes communication interruptions; column 3, lines 44-51), calculating a communication drop-off point (column 3, lines 44-51; where the drop-off point is calculated according to the "current position on earth, the relative position of the satellite cells and their size, shape and location..."); and before the drop-off point is reached, notifying a user of at least one of the communication devices of the drop-off (column 4, lines 1-15).

Tayloe does not specifically teach of data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress.

In related art, concerning a system for automated determination of handoff neighbor list for cellular communications system, Smolik teaches of consulting data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress (columns 1 and 2, lines 32-67 and 1-28, respectively; where an automated handoff list with information regarding intervening structures is maintained).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's method for processing a communication interruption with Smolik's information regarding interfering structures in order to automatically determine handoffs between neighboring base stations when communications deteriorate, as taught by Smolik.

Regarding claim 27, Tayloe in view of Smolik teaches all the limitations according to claim 26. Tayloe further teaches comprising notifying the user of a time interval until the drop-off (column 4, lines 3-5).

Regarding claim 28. Tayloe teaches of an intelligent electronic device comprising logic to: predict, a communication drop-off for two communication devices in communication (column 3, lines 22-28; e.g., "until an outage is predicted"; where an outage causes communication interruptions; column 3, lines 44-51), calculate a communication drop-off point (column 3, lines 44-51; where the drop-off point is

calculated according to the "current position on earth, the relative position of the satellite cells and their size, shape and location..."); and before the drop-off point is reached, notify a user of at least one of the communication devices of the drop-off (column 3, lines 23-29).

Tayloe does not specifically teach of data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress.

In related art, concerning a system for automated determination of handoff neighbor list for cellular communications system, Smolik teaches of consulting data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress (columns 1 and 2, lines 32-67 and 1-28, respectively; where an automated handoff list with information regarding intervening structures is maintained).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's method for processing a communication interruption with Smolik's information regarding interfering structures in order to automatically determine handoffs between neighboring base stations when communications deteriorate, as taught by Smolik.

3. Claims 10-16 and 18-20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tayloe in view Smolik as applied to claims 1, 12 and 15 above, and further in view of Amin et al. (Amin, US 5,995,830 A).

Regarding claim 10, Tayloe in view Smolik teaches all the limitations according to claim 1.

Tayloe in view Smolik does not specifically teach where the announcement also contains at least one reason for the communication interruption between the devices.

In related art, concerning a system and method for processing dropped calls, Amin teaches where the announcement also contains at least one reason for the communication interruption between the devices (column 2, lines 8-12; e.g., "may include the reasons that the connection was dropped").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's message including the reasons why the connection was dropped in order to "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claim 11, Tayloe in view Smolik teaches all the limitations according to claim 1.

Tayloe in view Smolik does not specifically teach the step of sending a message to the other communication device indicating the reason that the connection to the one communication device has been interrupted.

In related art, concerning a system and method for processing dropped calls, Amin teaches the step of sending a message to the other communication device indicating the reason that the connection to the one communication device has been

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interrupted (column 2, lines 8-12; e.g., "may include the reasons that the connection was dropped").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's message including the reasons why the connection was dropped in order to "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claims 12 and 22, Tayloe in view Smolik teaches all the limitations according to claims 1 and 21, respectively.

Tayloe in view Smolik does not specifically teach the step of reconnecting to the one communication device and re-establishing the communication.

In related art, concerning a system and method for processing dropped calls, Amin teaches the step of reconnecting to the one communication device and re-establishing the communication (column 2, lines 16-20).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's reconnecting and re-establishing the communication in order to maintain communication between the users, as taught by Amin.

Regarding claim 13, Tayloe in view Smolik and further in view of Amin teaches all the limitations according to claim 12. Amin further teaches the step of sending at least

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one reconnection indication to the other communication device upon a successful reconnection to the one communication device (column 2 lines 20-23).

Regarding claims 14 and 23, Tayloe in view Smolik teaches all the limitations according to claims 1 and 21, respectively.

Tayloe in view Smolik does not specifically teach the step of making at least one attempt to re-establish communication between the two communication devices.

In related art, concerning a system and method for processing dropped calls, Amin teaches the step of making at least one attempt to re-establish communication between the two communication devices (column 2, lines 13-18).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's attempt to re-establish communication in order to maintain communication between the users, as taught by Amin.

Regarding claim 15, Tayloe in view Smolik teaches all the limitations according to claim 1.

Tayloe in view Smolik does not specifically teach the step of attempting to reconnect to the one communication device, and if the reconnection fails, connecting the other communication device to another medium.

In related art, concerning a system and method for processing dropped calls, Amin teaches the step of attempting to reconnect to the one communication device, and if the reconnection fails, connecting the other communication device to another medium (column 2, lines 24-31; e.g., "voice mail").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's connecting the other communication device to another medium in order to "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claim 16, Tayloe in view Smolik and further in view of Amin teaches all the limitations according to claim 15. Amin further teaches where the another medium is selected from a group consisting of voice mail, a memory location, audio, data and video (column 2, lines 24-31; where the examiner selected "voice mail" from the choices provided by the applicant).

Regarding claim 18, Tayloe in view Smolik teaches all the limitations according to claim 1.

Tayloe in view Smolik does not specifically teach where at least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area, the method further comprising the step of: determining the reasons for the connection interruption.

In related art, concerning a system and method for processing dropped calls, Amin teaches where at least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area, the method further comprising the step of: determining the reasons for the connection interruption (column 2, lines 8-12; e.g., "the reasons that the connection was dropped").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's determination of the reasons why the connection was dropped in order to inform the users about them; thus, "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claim 19, Tayloe in view Smolik teaches all the limitations according to claim 1.

Tayloe in view Smolik does not specifically teach where the reason for interruption is selected from a group consisting of the communication device has traveled outside a coverage area, due to an indoor obstruction and due to an outdoor obstruction.

In related art, concerning a system and method for processing dropped calls, Amin teaches where the reason for interruption is selected from a group consisting of the communication device has traveled outside a coverage area, due to an indoor obstruction and due to an outdoor obstruction (column 5, table 2; e.g., "mobile telephone traveled outside coverage area").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's reason for interruption selected from a group of reasons for dropped call in order to assess the reconnection possibilities, as taught by Amin.

Regarding claim 20, Tayloe in view Smolik teaches all the limitations according to claim 1.

Tayloe in view Smolik does not specifically teach where at least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area, the method further comprising the step of: connecting the other communication device to voice mail without attempting to reconnect to the wireless communication device.

In related art, concerning a system and method for processing dropped calls, Amin teaches where at least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area, the method further comprising the step of: connecting the other communication device to voice mail without attempting to reconnect to the wireless communication device (column 2, lines 32-42 and column 5, lines 47-50).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's connecting the other communication device to voice mail without attempting to reconnect in order to "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claim 24, Tayloe in view Smolik teaches all the limitations according to claim 21.

Tayloe in view Smolik does not specifically teach the step of dialing a telephone number of the one communication device.

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In related art, concerning a system and method for processing dropped calls, Amin teaches the step of dialing a telephone number of the one communication device (column 3, lines 36-46).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Amin's step of dialing a telephone number in order to inform the user of a possible disconnection so that, the user can take measures that may "increase the chances that the communication between the users can continue", as taught by Amin.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tayloe in view Smolik and further in view of Bartle et al. (Bartle, US patent No.: 6,018,655 A).

Regarding claim 4, Tayloe in view Smolik teaches all the limitations according to claim 1. Tayloe further teaches where a prediction point is derived from one of historical data, geographical data, enhanced location data, topographical data and GPS (Global Positioning System) (column 3, lines 43-49).

Tayloe in view Smolik does not teach where the communication interruption prediction is based on historical data.

In related art, concerning imminent change warning, Bartle teaches where the communication interruption prediction is based on historical data (column 10, lines 20-31 and column 2, lines 6-17; where the history of conditions where thresholds have

been violated provide the basis for interruption predictions. The examiner selected "historical data" from the choices provided by the applicant).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik method for processing a communication interruption with Bartle's historical data in order to predict imminent communication disconnections, as taught by Bartle.

Regarding claim 5, Tayloe in view Smolik and further in view of Bartle teaches all the limitations according to claim 4. Bartle further teaches where the historical data is collected from at least one subscriber using the communication device along a path and analyzing the communication patterns, including interruptions, along the path (column 2, lines 6-34).

5. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tayloe in view Smolik, further in view of Bartle , and further in view of Elwin (Elwin, Randy; US Patent No.: 006,317,596 B1).

Regarding claim 6, Tayloe in view Smolik and further in view of Bartle teaches all the limitations according to claim 4.

Tayloe in view Smolik and further in view of Bartle does not specifically teach where the geographical data is collected by mapping areas along a path for obstructions that create communication interruptions.

In related art regarding an error detection and reporting system, Elwin teaches where the geographical data is collected by mapping areas along a path for obstructions

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that create communication interruptions (column 2, lines 3-7; where triangulation is a way of mapping).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tayloe in view Smolik and further in view of Bartle combination with Elwin's mapping system in order to acquire more precise data to achieve better future predictions that will avoid telephone calls from being dropped.

Regarding claim 7, Tayloe in view Smolik and further in view of Bartle teaches all the limitations according to claim 4. Elwin further teaches where the enhanced location data is collected by observing communication flow patterns and analyzing them for any communication interruptions (column 2, lines 7-11).

Regarding claim 8, Tayloe in view Smolik and further in view of Bartle teaches all the limitations according to claim 4. Elwin further teaches where the topographical data is collected by mapping areas along a path for terrain that creates communication interruptions (column 2, lines 3-7; where triangulation is a way of mapping topographical data).

Regarding claim 9, Tayloe in view Smolik and further in view of Bartle teaches all the limitations according to claim 4. Elwin further teaches where Global Positioning System (GPS) is used to observe the communication patterns and communication obstructions features and combines both to display communication interruption (column 2, lines 11-15).

Response to Arguments

6. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US Patent No.: 6,349,206 B1; teaches about a method, system and apparatus for providing a warning when a mobile terminal may lose service.

US Patent No.: 6,317,596; teaches about monitoring and saving call state information leading to a link failure in a non-volatile memory.

US Patent No.: 6,381,455; teaches about warning from an impending call drop in a wireless system.

US Patent No.: 6,343,216; deals with reconnection of a dropped call in a mobile communication system.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angelica Perez whose telephone number is 571-272-7885. The examiner can normally be reached on 7:00 a.m. - 3:30 p.m., Monday - Friday.

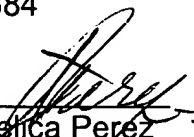
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either the PAIR or Public PAIR. Status information for unpublished applications is available through the Private PAIR only. For more information about the pair system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Information regarding Patent Application Information Retrieval (PAIR) system can be found at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service number is 703-306-0377.

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Angelica Perez
(Examiner)

June 14, 2005

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NAY MAUNG
SUPERVISORY PATENT EXAMINER

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